WHAT IS CLAIMED IS:

1. A method for determining an inventory buffer for use by a seller of products to a buyer, comprising:

(a) selecting a demand sample interval;

(b) determining the buyer's anticipated demand for the sample interval;

(c) determining the buyer's realized demand for the sample interval;

(d) repeating the steps (b) and (c) to generate a plurality of anticipated demand and realized demand value pairs;

(e) determining a plurality of demand change values from each one of the like plurality of anticipated demand and realized demand value pairs;

(f) modeling the plurality of demand change values as a probability distribution function;

(g) determining statistical parameters of the probability distribution function; and

(h) determining the inventory buffer from the statistical parameters.

2. The method of claim 1 wherein the statistical parameters comprise the mean and the standard deviation.

3. The method of claim 1 wherein an upside demand change value occurs when the realized demand is less than the anticipated demand, and wherein a downside demand change value occurs when the anticipated demand is less than the realized demand.

4. The method of claim 1 wherein the step (e) further comprises:

(e) determining a plurality of upside demand change values from the plurality of demand change values for which the realized demand is greater than the anticipated demand.

5. The method of claim 4 wherein the step (f) further comprises:

(f) modeling the plurality of upside demand change values as a probability distribution function.

6. The method of claim 1 wherein the probability distribution function comprises a normal probability distribution function.

7. The method of claim 1 wherein the step (b) is executed at a beginning of each sample interval.

8. The method of claim 1 wherein the step (c) is executed at an end of each sample interval.

9. The method of claim 1 wherein the sample interval is selected from among one week, two weeks and six weeks.

10. The method of claim 1 wherein the plurality of anticipated demand and realized demand pairs of the step (d) comprises 26 anticipated demand and realized demand pairs.

11. The method of claim 1 wherein the step (h) further comprises:

(h1) determining a shipping confidence factor;

(h2) determining the inventory buffer from the shipping confidence factor and the statistical parameters.

12. The method of claim 1 wherein the step (e) further comprises:

(e1) determining a difference between the anticipated demand and the realized demand for each demand change value pair; and

(e2) determining a ratio of the difference and the anticipated demand, wherein the ratio comprises one of the plurality of demand change values.

13. The method of claim 1 wherein the step (f) further comprises modeling the plurality of demand change values as a probability distribution function with the plurality of demand change values plotted on an x-axis and a number representing the number of occurrences for each demand change value from among the plurality of demand change values plotted on the y-axis.

14. The method of claim 1 wherein the steps (b) and (c) are periodically executed over a predetermined time horizon, and wherein the step (e) further comprises determining a plurality of demand change values from each one of the like plurality of anticipated demand and realized demand value pairs on a rolling forward basis for the predetermined time horizon, such that an earliest in time one of the plurality of demand change values is discarded and replaced by a latest in time demand change value.

15. A method for determining an inventory buffer for use by a seller of products to a buyer, comprising:

(a) selecting a demand sample interval;

(b) determining the buyer's anticipated demand for the sample interval;

(c) determining the buyer's realized demand for the sample interval;

(d) repeating the steps (b) and (c) to generate a plurality of anticipated demand and realized demand value pairs;

(e) determining a plurality of upside demand change values from the plurality of anticipated demand and realized demand value pairs, wherein an upside demand change value comprises a demand change value for which the realized demand is greater than the anticipated demand;

(f) modeling the plurality of upside demand change values as a probability distribution function;

(g) determining the mean and the standard deviation of the probability density function;

(h) summing the mean and the standard deviation to determine an inventory buffer factor; and

(i) determining an inventory buffer as the product of the material buffer factor and the demand sample interval.

16. The method of claim 15 wherein the mean comprises a volume weighted mean.

17. The method of claim 15 wherein the standard deviation comprise a volume weighted standard deviation.

18. The method of claim 15 wherein the step (g) further comprises:

(g1) determining the mean of the probability density function;

and wherein the step (h) further comprises:

(h1) determining a plurality of downside demand change values from the plurality of anticipated demand and realized demand value pairs, wherein a downside demand change value comprises a demand change value for which the realized demand is less than the anticipated demand;

(h2) determining a relationship between the plurality of downside demand change values and the plurality of upside demand change values;

(h3) selecting a shipping confidence factor;

(h4) determining a number of the upside demand change values that must be considered to achieve the shipping confidence factor in response to the relationship between the plurality of downside demand change values and the plurality of upside demand change values;

(h5) determining a demand variability factor from the number of upside demand change values as determined at the step (h4); and

(h6) combining the demand variability factor and the mean to determine the material buffer factor.

19. A method for determining an inventory buffer for a semiconductor fabrication process, comprising:

(a) selecting a demand sample interval;

(b) determining the buyer's anticipated demand for an integrated circuit product for the sample interval;

(c) determining the buyer's realized demand for the integrated circuit product for the sample interval;

(d) repeating the steps (b) and (c) to generate a plurality of anticipated demand and realized demand pairs;

(e) determining a plurality of demand change values from each one of the like plurality of anticipated demand and realized demand pairs;

(f) modeling the plurality of demand change values as a probability distribution function;

(g) determining statistical parameters of the probability distribution function; and

(h) determining the inventory buffer for the integrated circuit product from the statistical parameters.

20. The method of claim 19 wherein the plurality of demand change values comprise upside demand change values and downside demand change values, and wherein an upside demand change value comprises the realized demand less than the anticipated demand, and wherein a downside demand change value comprises an anticipated demand less than the realized demand, and wherein the step (f) further comprises modeling the plurality of upside demand change values as a probability density function.

21. The method of claim 19 wherein the step (h) comprises determining a first inventory buffer for a front end segment of the semiconductor fabrication process and a second inventory buffer for a back end segment of the semiconductor process.